IN THE SPECIFICATION

Please replace the paragraph at page 1, line 33 to page 2, line 9, with the following rewritten paragraph:

Another conventional technique for preventing the halation has been known by Japanese Patent Laid-open publication No. 6-217973. The publication (pages 21 – 22 and Fig. 50) explains that the lower limb is imaged with movements of scan positions, in which a preparation scan (or pre-scan) is first performed to detect contour data of an object to be examined to positional data of a couch on which the object is laid. The detected data of the contours and positions is produced into a control table to be referred when an imaging scan is performed. Specifically, the control table is subjected to reference so that the width-directional opening of an X-ray collimator is controlled for every position of the couch, which prohibits the X-ray from being radiated outside beyond the object's contours. In contrast, in this opening control of the X-ray collimator, the length-directional opening thereof (that is, the opening in a body-axis direction of the object) is always set to a constant value.

Please replace the paragraph at page 2, lines 30-35, with the following rewritten paragraph:

The present invention has been made with due consideration to the foregoing difficulties, and an object of the present invention is to provide an X-ray diagnostic system and an X-ray diagnostic method capable of making it possible to perform X-ray scanning in the most suitable conditions to track the flow of an X-ray contrast agent injected in an object to be examined and of lessening an operator's burden so as to improve the operationality.

Please replace the paragraph at page 2, line 36 to page 3, line 23, with the following rewritten paragraph:

In order to realize the foregoing object, according to one aspect of the present invention, there is provided an X-ray diagnostic system comprising: an X-ray source irradiating an X-ray; an X-ray detector detecting the X-ray; a support apparatus, a fluoroscopic scan unit, an imaging parameter setting unit, and an imaging scan unit. Of these, the support apparatus is configured to support both the X-ray source and the X-ray detector so that both the X-ray source and the X-ray detector are opposed to each other with a space left therebetween, a tabletop on which an object to be examined is laid being located in the space, the object being subjected to injection of an X-ray contrast agent when the object is examined. The fluoroscopic scan unit is configured to relatively move one of ~~both~~ the tabletop and the support apparatus with respect to the other and to perform a fluoroscopic scan along a direction predetermined with respect to the object with ~~the~~ one of [[both]] the tabletop and the support apparatus relatively moved with respect to the other, the X-ray contrast agent flowing substantially along the direction, thereby a fluoroscopic image of the object being provided along the direction. The imaging parameter setting unit is configured to set, at every region to be examined of the object, imaging parameters required for an imaging scan on the basis of the fluoroscopic image, the regions being at least continuous without a gap along the direction determined with respect to the object. And the imaging scan unit is configured to relatively move ~~the~~ one of ~~both~~ the tabletop and the support apparatus with respect to the other and, with [[the]] one of [[both]] the tabletop and the support apparatus relatively moved with respect to the other, perform the imaging scan on the object on the imaging parameters set by the imaging parameter setting unit.

Please replace the paragraph at page 3, line 29 to page 4, line 1, with the following rewritten paragraph:

It is preferred that the imaging parameter setting unit is configured to accept ~~operator's manually operated~~ information inputted manually by the operator and to set the imaging parameters in response to the operator's manually ~~operated~~ inputted information. For example, according to a flowing speed of the X-ray contrast agent, a relative moving speed of one of the tabletop and the support apparatus to the other can be controlled. Also the flowing speed of the X-ray contrast agent can be used for control of a frame rate for the X-ray imaging. As a result, corresponding to the flow states of the X-ray contrast agent, X-ray imaging conditions can be optimized.

Please replace the paragraph at page 4, lines 2-14, with the following rewritten paragraph:

It is also preferred that the imaging parameter setting unit is configured to, from the fluoroscopic image obtained by the fluoroscopic scan unit, automatically recognize the region through which the X-ray contrast agent flows and to set the imaging parameters based on a recognized result of the automatic recognition. This automatic recognition allows the flow of the X-ray contrast agent to be traced automatically during the fluoroscopic scan, so that an opening of the X-ray collimator can be adjusted substantially in real time even under the fluoroscopic scan. The automatic recognition of flow of the contrast agent provides a flowing speed and an amount of movement thereof. These pieces of information about the contrast agent are used to automatically determine imaging parameters, such as an X-ray collimating opening at each imaging position and a relative moving speed between [[both]] the tabletop and the support apparatus, thus remarkably lowering an operational burden on physicians.

Please replace the paragraph at page 4, lines 15-36, with the following rewritten paragraph:

According to a second aspect of the present invention, there is provided a method of X-ray imaging performed by the X-ray diagnostic system comprising an X-ray source irradiating an X-ray; an X-ray detector detecting the X-ray; and a support apparatus configured to support both the X-ray source and the X-ray detector so that both the X-ray source and the X-ray detector are opposed to each other with a space left therebetween, a tabletop on which an object to be examined is laid being located in the space, the object being subjected to injection of an X-ray contrast agent when the object is examined, the method comprising the steps of: relatively moving one of [[both]] the tabletop and the support apparatus with respect to the other and performing a fluoroscopic scan along a direction predetermined with respect to the object with ~~the~~ one of [[both]] the tabletop and the support apparatus relatively moved with respect to the other, the X-ray contrast agent flowing substantially along the direction, thereby a fluoroscopic image of the object being provided along the direction; setting, at every region to be examined of the object, imaging parameters required for an imaging scan on the basis of the fluoroscopic image, the regions being at least continuous without a gap along the direction determined with respect to the object; and relatively moving ~~the~~ one of [[both]] the tabletop and the support apparatus with respect to the other and, with ~~the~~ one of [[both]] the tabletop and the support apparatus relatively moved with respect to the other, performing the imaging scan on the object on the imaging parameters. This method also provides the similar or identical advantages to those provided by the X-ray diagnostic system.

Please replace the paragraph at page 11, lines 19-27, with the following rewritten paragraph:

Concerning adjacent imaging positions, it is preferred that, if taking a reduced amount of object's X-ray exposure into consideration, an overlap between their imaging fields is made as ~~smaller~~ small as possible in the object's body-axis direction (the Y-direction). In contrast, to track the X-ray contrast agent in motion within images without fail, a limited amount of overlap between two adjacent imaging fields is unavoidable, even when an imaging rate "f" is adjusted in dependence upon a speed λ of the contrast agent (the imaging rate is 30 frames per second at the maximum, but if necessary, can be adjusted to 15 frames per second or 7.5 frames per ~~seconds~~ second, for instance ~~instance.~~).

Please replace the paragraph at page 12, lines 19-29, with the following rewritten paragraph:

An operator thus ~~makes~~ displays the fluoroscopic images on the display unit 62 in sequence, as shown in Fig. 5(b), during which time the operator observes how the injected contrast agent flows in each image. When a desired image appears on the display unit 62, the replay on the screen is stopped to freeze the image. As shown in Fig. 5(c), a dashed-line frame showing an opening of the X-ray collimator 21 is placed on the frozen image, the dashed-line frame being set to an appropriate size and position for an imaging scan to be carried out after the pre-scan and limiting the X- and Y-directional positions of the blades 21a to 21d. In response to operator's operations of the pointing device on the operation panel 52, the X-ray collimating controller 55 is activated to enable the above setting operations.

Please replace the paragraph at page 13, lines 24-31, with the following rewritten paragraph:

In response to the decision of the imaging parameters such as the collimating openings, imaging intervals between imaging positions, and moving speeds of the C-shaped arm 13 at the respective imaging positions, an imaging scan for acquiring images to be actually diagnosed is performed. The imaging scan consists of a scan based on a mask sequence, which is carried out before injecting the X-ray contrast agent into an object to be imaged and a scan based on a contrast sequence, which involves the X-ray contrast agent to be injected for the scan.

Please replace the paragraph at page 14, lines 4-14, with the following rewritten paragraph:

After this, an X-ray contrast agent is injected to the object, and a scan based on the contrast sequence is carried out toward the object along a direction of flow of the contrast agent under the control of the imaging parameter controller 65. This scan is done in the same way as the scan based on the mask sequence, thereby a contrast image being produced at each imaging position. In the imaging scan, both the imaging parameters such as a moving speed of the C-shaped arm 13 and information about an ~~elapse~~ elapsed time counted after the injection of the contrast agent is supplied to the imaging parameter controller 65 in sequence. Thus, the imaging parameter controller 65 is allowed to perform the imaging according to the conditions read out from the imaging parameter storage 64.

Please replace the paragraph at page 15, lines 16-23, with the following rewritten paragraph:

Then, the processing is shifted to step S12, where the set values in the imaging parameter storage 64 [[is]] are subjected to search for a moving speed β of the C-shaped arm 13 at the current imaging position. At step S13, the data of both the opening of the X-ray collimator 21 and the moving speed β of the C-shaped arm 13 [[is]] are then transmitted to the imaging parameter storage 65. Accordingly, at step S14, based on the set values in the imaging parameter storage 64, the imaging parameter controller 65 works such that both the mask images and the contrast images are produced through the imaging scan.

Please replace the paragraph at page 18, lines 32-34, with the following rewritten paragraph:

The skeleton processor 70 performs the extraction of a skeleton ~~extraction~~, the production of a difference image, and the determination of a collimating opening, in sequence.

Please replace the paragraph at page 21, lines 7-15, with the following rewritten paragraph:

Therefore, during the execution of the pre-scan, a fluoroscopic image acquired by the ~~pres-can~~ pre-scan under a planned sampling rate based on an experimental value is displayed in real time. The data of the fluoroscopic image is then subjected to differential processing to extract the skeleton of the X-ray contrast agent at respective imaging positions. Hence, a difference image between the skeleton images extracted at the current imaging position (plural sampling timings tn) and the last imaging position (plural sampling timings tn-1) is

produced. How to produce the difference image is pictorially exemplified in Fig. 16(a) to (c) and (d) to (f).